

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Levisticum officinale*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	(+)-FALCARINDIOL	Root		600.0		--
67	1,8-CINEOLE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-METHYL-BUTANAL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-OCTANONE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	3-BUTYL-4,5-DIHYDROPHthalide	Root				--
0	3-BUTYLPHthalide	Root	600.0	5440.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	4-OCTANONE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	5-METHOXY-PSORALEN	Fruit		6.0	-0.5570860145311556	Abstract (See species file)
21	8-METHOXY-PSORALEN	Fruit	0.0	1.0	-0.7071067811865476	Abstract (See species file)
16	ACETIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	ALKYL-PHTHALIDES	Root	1400.0	11900.0		--
0	ALPHA-FENCHYL-ALCOHOL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-P-DIMETHYL-STYRENE	Root	3.0	30.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Root	1.0	10.0		--
28	ALPHA-PINENE	Root	20.0	200.0	-0.691320833774299	--
3	ALPHA-SELINENE	Root	10.0	100.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	ALPHA-TERPINENE	Root	1.0	10.0	-0.621095587088787	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	ALPHA-TERPINEOL	Root	8.0	80.0	-0.48963525535860764	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-TERPINYL-ACETATE	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	ANGELIC-ACID	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ANGEOLIDE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
20	APIOLE	Seed				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	APTERIN	Root				--
3	AR-CURCUMENE	Root	1.0	13.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	BENZENE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
20	BENZOIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
9	BENZYL-ALCOHOL	Root	3.0	30.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
26	BERGAPTEN	Root				--
0	BETA-CHAMIGRENE	Root	1.0	13.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	BETA-ELEMENE	Root	12.0	125.0	1.0	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	BETA-PHELLANDRENE	Root	24.0	240.0	-1.0	--
13	BETA-PINENE	Root	21.0	210.0	-0.4535265537017665	--
3	BETA-SELINENE	Root	10.0	100.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
47	BETA-SITOSTEROL	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	BETA-SITOSTEROL-BETA-D-GLUCOSIDE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
35	BORNEOL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BUTYL-DIHYDROPHthalide	Root				--
0	BUTYL-HEXAHYDROPHthalide	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	BUTYL-PHTHALIDE	Root	153.0	1535.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	BUTYLDENE-PHTHALIDE	Root	153.0	1535.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BUTYLDENE-PHTHALIDES	Root	700.0	7000.0		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
102	CAFFEIC-ACID	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CALAMENENE	Root	0.0	5.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	CAMPHENENE	Root	7.0	70.0	-0.6207659127814102	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
41	CAMPHOR	Root	1.0	10.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
37	CARVACROL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
19	CARVONE	Root	10.0	100.0	-0.6407782732096975	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CARVOTANACETONE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-3-HEXENYL	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CIS-LIGUSTILIDE	Root	240.0	2040.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	CIS-OCIMENEN	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
20	CITRONELLAL	Plant				--
1	COPAENE	Root	29.0	290.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
57	COUMARIN	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	COUMARINS	Root	1000.0	43000.0		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	CUPARENE	Root	0.0	5.0	-1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CUPARENENE	Root	1.0	13.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	D-ALPHA-TERPINEOL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
8	DELTA-3-CARENE	Root	1.0	10.0	-0.6900357033009535	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	DELTA-CADINENE	Root	0.0	5.0	-0.7293152632519274	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DELTA-SELINENE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DIHYDROBUTYLIDENE-PHTHALIDE	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
5	DIPHENYL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	E-LIGUSTILIDE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	EO	Seed	8000.0	11000.0	-0.41143918923758516	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	EO	Root	1000.0	18000.0	0.19305478891253464	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EO	Plant	500.0	2450.0	-0.553932933543244	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
76	EUGENOL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	FAT	Fruit		147000.0	0.48152208598971263	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
61	FERULIC-ACID	Fruit				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
6	FURFURAL	Root	2.0	20.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	FURFUROL	Root	1.0	10.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-CADINENE	Root	0.0	5.0	-1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	GAMMA-TERPINENE	Root	3.0	30.0	-0.6072624134245684	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
35	GERANIOL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	HEPTANAL	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	HEXANOL	Root	61.0	610.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	HYDROPHthalide-ACIDS	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
25	IMPERATORIN	Fruit		13.0	-0.3654800233022117	Abstract (See species file)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOSENKYUNOLIDE	Root				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
5	ISOVALERIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	LEVISTOLIDE-A	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	LEVISTOLIDE-B	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	LIGUSTICIDE	Root	215.0	2150.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LIGUSTICUMLACTONE-E-BUTYLIDENE-PHTHALIDE	Root				--
0	LIGUSTICUMLACTONE-Z-BUTYLIDENE-PHTHALIDE	Root				--
60	LIMONENE	Root	8.0	80.0	-0.5781714696190392	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LIMONENE-10-OL	Root	1.0	10.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
53	LINALOOL	Root	3.0	30.0	1.543024243243428	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LINALOOL	Root	3.0	30.0		--
0	MALEIC-ACID	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
63	MENTHOL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Root	6.0	60.0	-0.5854605389086612	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	MYRISTIC-ACID	Root				--
31	MYRISTICIN	Seed				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	MYRTENOL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	N-BUTYRIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	N-PENTYL-BENZENE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	OCTYL-ALDEHYDE	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
16	P-CYMENE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	PALMITIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	PENTACYCLOHEXADIENE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	PHTHALIDES	Root	700.0	12600.0		--
5	PRETAZETTINE	Stem				--
0	PROTEIN	Fruit		200000.0	1.2132114250920008	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
31	PSORALEN	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
31	PSORALEN	Fruit		3.0	-0.46474431282748374	Abstract (See species file)
0	RESIN	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	SEDANENOLIDE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	SEDANOIC-ACID	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	SEDANOIC-ANHYDRIDE	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	SENKYUNOLIDE	Root				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
5	STARCH	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SUGAR	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
23	TERPINEN-4-OL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	THUJOPSENE	Root	8.0	80.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRANS-2-NONENAL	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRANS-ALPHA-BERGAMOTENE	Root	12.0	125.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	TRANS-ANETHOLE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-LIGUSTILIDE	Root	240.0	2040.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	TRANS-OCIMENE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	UMBELLIFERONE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	VALIDENE-4,5-DIHYDROPHthalide	Root				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
2	Z-LIGUSTILIDE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.